CORE
Metadata, citation and similar papers at core.ac.uk
Provided by Elsevier - Publisher Connector

Available online at www.sciencedirect.com
ScienceDirect
Journal of Functional Analysis 244 (2007) 691–692
JOURNAL OF Functional Analysis
www.elsevier.com/locate/jfa

Corrigendum

Corrigendum to "Constructing extensions of ultraweakly continuous linear functionals" [J. Funct. Anal. 178 (2000) 421–434]

Douglas Bridges *, Luminiţa Vîţă (Dediu)

Department of Mathematics & Statistics, University of Canterbury, Private Bag 4800, Christchurch, New Zealand

Available online 19 January 2007

The paper contains an error at line 18 on p. 430. Proposition 5 allows us to construct $v \in S_0^*$ such that $v(\mathbf{z}) = \frac{1}{2}\|\mathbf{z}\|_0$; but, whereas the choice of $\mathbf{z}$ at line 12 has

$$\|\mathbf{z}\| = \left(\sum_{k=1}^{n} \|z_k\|^2 \right)^{1/2} = 1,$$

we do *not* have

$$\|\mathbf{z}\|_0 = \sup \left\{ \left| \sum_{k=1}^{n} \langle T x_k, y_k \rangle \right| : T \in \mathcal{N}_1 \right\} = 1.$$

One way of putting things right is to consider not an ultraweakly continuous functional on a linear subset of $\mathcal{B}(H)$ with weak-operator totally bounded unit ball, but a linear functional ϕ on $\mathcal{B}(H)$ that satisfies the following condition:

SC There exist $\delta > 0$ and a set $\{e_1, \ldots, e_n\}$ of pairwise orthogonal unit vectors in H such that if $T \in \mathcal{B}(H)$ and $\sum_{i,j=1}^{n} |\langle T e_i, e_j \rangle| < \delta$, then $|\phi(T)| < 1$.

We have the following theorem:

DOI of original article: 10.1006/jfan.2000.3657.
* Corresponding author.
E-mail address: d.bridges@math.canterbury.ac.nz (D. Bridges).

0022-1236/$ – see front matter © 2000 Elsevier Inc. All rights reserved.
doi:10.1016/j.jfa.2006.12.002

Let H be a nontrivial Hilbert space, and ϕ a linear functional on $\mathcal{B}(H)$ with the property **SC**. Then for each $\varepsilon > 0$ there exist a finite set $\{e_1, \ldots, e_n\}$ of pairwise orthogonal unit vectors in H and elements c_{jk} $(1 \leqslant j, k \leqslant n)$ of $\mathbb{C}$ such that

$$\left| \phi(T) - \sum_{j,k=1}^{n} c_{jk} \langle Te_j, e_k \rangle \right| < \varepsilon$$

for all T in the unit ball of $\mathcal{B}(H)$.

The details are provided on pp. 137–142 of [1]. Note that, with classical logic, condition **SC** is equivalent to the weak-operator continuity of the functional ϕ.

Reference

[1] D. Bridges, L. Vîţă, Techniques of Constructive Analysis, Universitext, Springer, New York, 2006.